CLAIMS

1. A method for controlling the user plane of a UMTS Terrestrial Radio Access Network, UTRAN, comprising a first edge node connected via a Transport Network Layer to a second edge node, by using Transport Network Layer, TNL, signalling, the method comprises the step of:
-setting up a radio link by using the Node B Application Part between the first and second edge nodes of the UTRAN, the method is **characterised in** that it comprises the further steps of:
-transmitting (701) RSVP-TE based TNL signalling messages between said first and second edge nodes for each TNL flow,
-identifying (702) each TNL flow by using RSVP-TE messages, wherein the object SESSION and SENDER_TEMPLATE comprises an IP based 5-tuple flow information, which is adapted to be used as a TNL flow identity.

2. The method according to claim 1,wherein the method comprises the further step of:
-establishing one RSVP-TE tunnel for each connection direction between the first edge node and the second edge node.

3. The method according to any of claims 1-2, wherein the method comprises the further step of:
-initiating the TNL signalling by sending a PATH message comprising at least reservation information such as bandwidth for interior nodes and at least the TNL flow identity.

4. The method according to claim 3, wherein the method comprises the further step of:
-processing the reservation information in each interior node between the edge nodes.

5. The method according to claim 3, wherein the method comprises the further step of:
-processing the TNL flow identity in the edge nodes.

6. The method according to claim 3, wherein the method comprises the further step of:

-responding to said PATH message by transmitting a RESV message comprising standard RSVP-TE objects and PHR and PDR objects in the reverse direction.

7. The method according to claim 3, wherein the method comprises the further step of:

-responding to said PATH message by transmitting a RESV message comprising standard RSVP-TE, PHR, PDR objects or AAL2_LABEL_REQUEST or AAL2 LABEL objects in the reverse direction, and

-inserting a resource reservation confirmation information in said RESV message.

8. The method according to any of claims 1-6, wherein the first edge node is a Radio Network Controller in the UTRAN and the second edge node is a Node B in the UTRAN.

9. The method according to any of claims 1-6, wherein the second edge node is a Radio Network Controller in the UTRAN and the first edge node is a Node B in UTRAN.

10. The method according to any of claims 1-5 and 7, wherein the first edge node is a Radio Network Controller in the UTRAN and the second edge node is an InterWorking Unit between an IP based part of the UTRAN and an AAL2/ATM part of the UTRAN.

11. The method according to any of claims 1-5 and 7, wherein the second edge node is a Radio Network Controller in the UTRAN and the first edge node is an InterWorking Unit between an IP based part of the UTRAN and an AAL2/ATM part of the UTRAN.

12. The method according to claim 1, wherein the method comprises the further step of:

-configuring an AAL2/ATM UTRAN part by sending a PATH message comprising a Channel Identification Value, CID, VPI/VCI values to adjacent nodes along the path of the connection.

13. The method according to claim 12, wherein the object LABEL_REQUEST with ATM Label Range is adapted to carry VPI/VCI values and AAL2_LABEL_REQUEST is adapted to carry CID value.

14. The method according to any of claims 12-13, wherein the method comprises the further step of:

-responding to said PATH message and said AAL2 label request by transmitting a RESV message comprising at least an ATM LABEL object comprising VPI and VCI and an AAL2 LABEL object comprising CID of the connection.

15. The method according to claim 14, wherein the method comprises the further step of:

-processing the LABEL and AAL2_LABEL objects by the same nodes in which LABEL_REQUEST and AAL2_LABEL_REQUEST were originated.

16. The method according to any of claims 12-15, wherein the method comprises the further step of:
-ensuring the Quality of Service (QoS) in the ATM/AAL2 network part, by using AAL2 CAC.

17. The method according to claim 13, wherein the less significant eight bits of the objects LABEL_REQUEST and the object LABEL with AAL2 label range comprise a CID value

18. The method according to any of claims 12-17, when an Inter-working Unit (IWU) operates between the ATM network part and the IP network part, the method comprises the further step of:

-translating the Q.AAL2 and the IP-ALCAP messages to said RSVP-TE based TNL signalling messages.

19. An arrangement for controlling the user plane of a UMTS Terrestrial Radio Access Network, UTRAN, (102) comprising a first edge node (105) connected via a Transport Network Layer to a second edge node (104), by using Transport Network Layer, TNL, signalling, the arrangement comprises means for setting up a radio link by using the Node B Application Part between the first (105) and second (104) edge nodes of the UTRAN (102), the arrangement is **characterised in** that the arrangement comprises means for transmitting RSVP-TE based TNL signalling messages between said first and second edge nodes for each TNL flow,
means for identifying each TNL flow by using RSVP-TE messages, wherein the object SESSION and SENDER_TEMPLATE comprises an IP based 5-tuple flow information, which is adapted to used as a TNL flow identity.

20. The arrangement according to claim 19,wherein the arrangement comprises means for establishing one RSVP-TE tunnel for each connection direction between the first edge node and the second edge node.

21. The arrangement according to any of claims 19-20, wherein the arrangement comprises means for initiating the TNL signalling by sending a PATH message comprising at least reservation information such as bandwidth for interior nodes and at least the TNL flow identity.

22. The arrangement according to claim 21, wherein the arrangement comprises means for processing the reservation information in each interior node between the edge nodes.

23. The arrangement according to claim 21, wherein the arrangement comprises means for processing the TNL flow identity in the edge nodes.

24. The arrangement according to claim 21, wherein the arrangement comprises means for responding to said PATH message by transmitting a RESV message comprising standard RSVP-TE objects and PHR and PDR objects in the reverse direction.

25. The arrangement according to claim 21, wherein the arrangement comprises means for responding to said PATH message by transmitting a RESV message comprising standard RSVP-TE, PHR, PDR objects or AAL2_LABEL_REQUEST or AAL2 LABEL objects in the reverse direction, and means for inserting a resource reservation confirmation information in said RESV message.

26. The arrangement according to any of claims 19-24, wherein the first edge node is a Radio Network Controller in the UTRAN and the second edge node is a Node B in the UTRAN.

27. The arrangement according to any of claims 19-24, wherein the second edge node is a Radio Network Controller in the UTRAN and the first edge node is a Node B in UTRAN.

28. The arrangement according to any of claims 19-23 and 25, wherein the first edge node is a Radio Network Controller in the UTRAN and the second edge node is an InterWorking Unit between an IP based part of the UTRAN and an AAL2/ATM part of the UTRAN.

29. The arrangement according to any of claims 19-23 and 25, wherein the second edge node is a Radio Network Controller in the UTRAN and the first edge node is an InterWorking Unit between an IP based part of the UTRAN and an AAL2/ATM part of the UTRAN.

30. The arrangement according to claim 19, wherein the arrangement comprises means for configuring an AAL2/ATM UTRAN part by sending

a PATH message comprising a Channel Identification CID, VPI/VCI values to adjacent nodes along the path of the connection.

31. The arrangement according to claim 30, wherein the object LABEL_REQUEST with ATM Label Range is adapted to carry VPI/VCI values and AAL2_LABEL_REQUEST is adapted to carry CID value.

32. The arrangement according to any of claims 30-31, wherein the arrangement comprises means for responding to said PATH message and said AAL2 label request by transmitting a RESV message comprising at least an ATM LABEL object comprising VPI and VCI and an AAL2 LABEL object comprising CID of the connection.

33. The arrangement according to claim 32, wherein the arrangement comprises means for processing the LABEL and AAL2_LABEL objects by the same nodes in which LABEL_REQUEST and AAL2_LABEL_REQUEST were originated.

34. The arrangement according to any of claims 30-33, wherein the arrangement comprises means for ensuring the Quality of Service (QoS) in the ATM/AAL2 network part, by using AAL2 CAC.

35. The arrangement according to claim 31, wherein the less significant eight bits of the objects LABEL_REQUEST and the object LABEL with AAL2 label range comprise a CID value

36. The arrangement according to any of claims 30-35, when an Inter-working Unit (IWU) operates between the ATM network part and the IP network part, comprises means for translating the Q.AAL2 and the IP-ALCAP messages to said RSVP-TE based TNL signalling messages.